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COTTAGE POLLUTION CONTROL
PROGRAM

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CENTRAL REGION

HALIBURTON

HALL'S LAKE

MOUNTAIN LAKE

DISTRICT MUNICIPALITY OF MUSKOKA

LAKE OF BAYS

SIX MILE LAKE

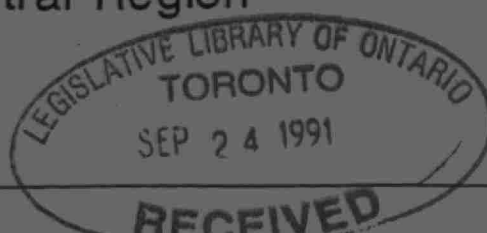
1986



Ontario

Ministry
of the
Environment

G. MIERZYNSKI, Director
Central Region



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COTTAGE POLLUTION CONTROL PROGRAM
MUSKOKA-HALIBURTON
FIRST PRINTING APRIL, 1987

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COTTAGE POLLUTION CONTROL PROGRAM

1986

HALIBURTON COUNTY

MOUNTAIN LAKE	- ANSON, HINDON, MINDEN TOWNSHIPS
HALL'S LAKE	- STANHOPE TOWNSHIP

DISTRICT MUNICIPALITY OF MUSKOKA

LAKE OF BAYS	- TOWNSHIP OF LAKE OF BAYS
SIX MILE LAKE	- TOWNSHIP OF GEORGIAN BAY

REPORT PREPARED BY

ABATEMENT EAST SECTION

MUSKOKA-HALIBURTON DISTRICT OFFICE

GRAVENHURST

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PREFACE

Ontario's thousands of beautiful inland lakes provide an abundant resource for recreational enjoyment. To protect the quality of these waters, a delicate environmental balance must be maintained.

A heavy influx of people may subject a lake and its surrounding environment to great stress. Uncontrolled development and imprudent use of our recreational lakes may cause their deterioration and destroy their natural qualities.

The Ontario Ministry of the Environment is attempting to bring some of these stress factors under control by a variety of programs. One of these, the Cottage Pollution Control Program, was initiated in 1970 to study the cottage waste disposal problem, to evaluate existing waste disposal systems and to enforce repairs to those found to be unsatisfactory.

SUMMARY

The objective of the program is to examine and evaluate all existing sewage disposal systems on recreational lakes and to ensure satisfactory correction to all faulty systems.

The detection work is conducted by trained seasonal staff (students) who survey all the systems on selected lakes. The surveyed systems are evaluated by Environmental Technicians. The systems found to be malfunctioning are checked by an Abatement Officer who negotiates an agreement with the owner for corrective work to be executed. The corrected system is examined again to ensure compliance with the agreement and pertinent regulations.

In 1986, 883 private sewage disposal systems were inspected on Lake of Bays; Six Mile Lake; District Municipality of Muskoka and Hall's Lake and Mountain Lake, Haliburton County. The inspection of these systems indicated that 31.5% were performing satisfactorily, 41.7% were seriously substandard, 20% were discharging washwater or solid waste onto the ground surface, 0.2% were direct polluters and 6.6% were unclassified after the initial detection survey. Appendix I is a summary of the inspection results.

As of December 31, 1986, 35 agreements for corrective work to be carried out had been signed by the owners. Corrections have been completed and inspected for 68 systems; 134 systems remain uncorrected, however, negotiations are continuing in anticipation of correction by owners in the spring of 1987.

COTTAGE POLLUTION CONTROL SURVEY

Preparation

During the fall of 1985 and winter of 1986, a reconnaissance and mapping program was undertaken on selected lakes by Ministry of the Environment personnel.

The crew counted the number of establishments on each lake. Every one hundredth establishment on the shoreline was photographed and described. The cottage and non cottage properties such as marinas, camp grounds and lodges were then plotted on maps.

Data obtained from the field work, other Provincial and Municipal agencies and Cottage Associations were used to prepare a work schedule for the survey crews.

The co-operation of Cottage Associations contributed greatly to the success of the program. Prior to the commencement of the survey of each lake, the Cottage Association was contacted. They were given a brief outline of the survey procedures that would be followed and also the information that would be required from each cottager. In certain cases, a mid-summer meeting was arranged with the Association during which abatement procedures were discussed.

In the event that a Cottage Association does not exist, notices are posted throughout the area, where people may congregate (local stores, post offices, public docks, etc.). This situation usually exists along rivers or small lakes.

DETECTION SURVEYS

The crews, each composed of two students, began the survey of the lake by preparing a description log. Each building which is called a establishment was systematically numbered, accurately described and plotted onto a map to facilitate the location of the premises at a future time by detection crews or abatement staff. When the description logging was completed, copies were made and distributed to each crew.

The detection teams visited each establishment on the lake. The owner or occupant was interviewed and the lot surveyed. The information collected included type of building, number of occupants, type of use, water supply and treatment, sewage disposal methods and type, location, size and set back of on-site sewage disposal systems, type and depth of soil and physical evidence of malfunctioning systems. All data collected was entered on survey forms.

From this information the performance of the system was evaluated and the system for each establishment was given a preliminary performance classification. The classification was then verified by the supervisor.

Classification of Sewage Disposal Systems

The sewage disposal systems of all premises surveyed were classified into one of the following groups.

1. Satisfactory

A system which meets the current standards of good design, construction and location, is properly maintained, is capable of handling sewage flows and is not causing a pollution problem.

2. Satisfactory Performance

A system which may be slightly deficient in design, setback or construction with respect to current standards. The deficiency, however, cannot be of a nature that would constitute a pollution problem.

3. Seriously Substandard

A system which does not meet current standards of design, construction and location, is in a state of neglect or has a limited life. The system is not presently causing a pollution problem, however the

system, due to a serious deficiency, will not be capable of treating the sewage flows in the near future. The owner is notified in writing of the deficiency and advised that serious consideration should be given to upgrading in the near future.

4. Nuisance (washwater is also known as grey water and is classified as sewage)

A system that causes grey water to be exposed on the surface of the ground either directly through a waste pipe or escaping from a leaching pit. Such a condition is considered as a public health nuisance. Phosphates and other nutrients from grey water discharges encourage weed growth and effect the aesthetic quality of the lake.

5. Nuisance (toilet or solid waste)

A system that causes sewage to be exposed on the surface of the ground, either directly through a pipe or escaping from some part of the sewage disposal system. Also included in this classification is "solid waste" or garbage of a kind which can cause a "Nuisance"; for example, domestic garbage containing food waste.

6. Direct Pollution

A system which is permitting sewage or leachate to contaminate the ground or surface water.

7. Unclassified (temporarily)

A system which has been given a preliminary classification by the student inspector where he feels he cannot use any of the preceding classifications and has doubts about the system, or any part of it. These systems require further inspection by the supervisor who will attempt to make a final classification after a thorough investigation.

8. Unclassified

A system which is not possible by the end of the survey to make a classification. This category includes only a few abandoned premises in a dilapidated condition with a system that is obviously not in use and could not be used.

Corrective Procedure

After a file is examined by the supervisor and the original classification is confirmed or altered, it is referred to an Environmental Officer if abatement of a problem is required. The Officer then interviews the owner to advise him of the findings and discuss corrective action. If the owner agrees with the findings, a corrective program is initiated. He is asked to sign a "Pollution Abatement Report" describing the problems found and the corrective measures required to be completed by a specific date. A final inspection is carried out upon completion of the corrective work and the sewage disposal system file is appropriately reclassified. Occasionally, an owner refuses to comply with a correction program and legal action must be initiated.

In the case of commercial establishments, this procedure is often more complex, requiring an engineering study and the submission of plans and a soil analysis report for approval. Except where there is direct pollution, the owner is contacted and is instructed to submit plans for corrective measures to be completed prior to the opening of the next commercial season.

Where a direct pollution problem exists, corrective action must be initiated immediately to prevent any further deterioration of water quality in the lake.

Methods of Sewage Disposal

The cottage areas of Muskoka-Haliburton are mostly unsewered and therefore the cottage owner must use on site sewage treatment and disposal. These systems range from a privy and leaching pit to a proprietary aerobic sewage treatment plant. The type of system used will vary according to lot size, topography, soil type, hydrologic conditions and sewage flows. Most cottagers choose the septic tank systems as their method of sewage disposal. This system uses a septic tank and leaching bed. The tank removes solids and the leaching bed uses soil to reduce BOD, nutrients, and micro-organisms. Bacteria reduces the sewage to compounds and elements capable of use by the natural environment. Since soil is used as the treatment medium, the system size varies according to type of soil and sewage flows.

Another method of treatment and disposal is the proprietary aerobic package treatment plant. In this system oxygen is mixed with the sewage creating a suitable environment for aerobic bacteria which produces an effluent of improved quality. Therefore the filter bed can be reduced in size.

When sewage flows, topography and soil conditions preclude the installation of a septic tank system or proprietary aerobic package treatment plant, a holding tank is often used. It is not considered a treatment system, and is only intended for sewage retention until it can be removed and taken to an approved disposal site by a licensed sewage hauler.

The privy, incinerating, chemical , recirculating and composting toilets are accepted methods of disposal, however, they are not acceptable for grey water disposal. The leaching pit can be used only for the treatment of grey water in limited water usage situations. A septic tank is not part of the system. Again, soil is used as the treatment medium, therefore lot area, topography, soil type, hydrology and grey water flows are assessed when examining sites.

The Muskoka-Haliburton area is located on the Precambrian Shield with glacial till soil and many granite rock outcroppings, making many lots naturally unsuitable for installation of private sewage disposal systems. Most sites must be modified by the addition of filter material, slope adjustments and drainage alterations.

ABATEMENT PROGRESS FROM 1985 COTTAGE POLLUTION CONTROL
PROGRAM

During the Summer of 1985, the Cottage Pollution Control Program was conducted on the following lakes: Lake of Bays and Lake Muskoka (Browning Island); District Municipality of Muskoka and Horseshoe Lake, Haliburton County and Lower Paudash Lake, Hastings and Haliburton County. A total of 930 private sewage disposal systems were inspected. Of these, 37% were performing satisfactorily, 37% were found to be seriously substandard, 16% were discharging washwater or solid waste onto the ground surface, 2% were direct polluters and 7% were unclassified after the initial detection survey. All of the owners with seriously substandard systems were contacted and advised that their system should be monitored carefully and may require updating in the near future. As of December 31, 1986, corrective action on 75% of the systems which required upgrading was completed in Muskoka-Haliburton. The majority of the owners of the remaining systems requiring upgrading have signed agreements for completion during the Summer of 1987.

Legal action is being initiated against the few remaining owners who have refused to respond to attempts by Environmental Officers to have remedial measures completed.

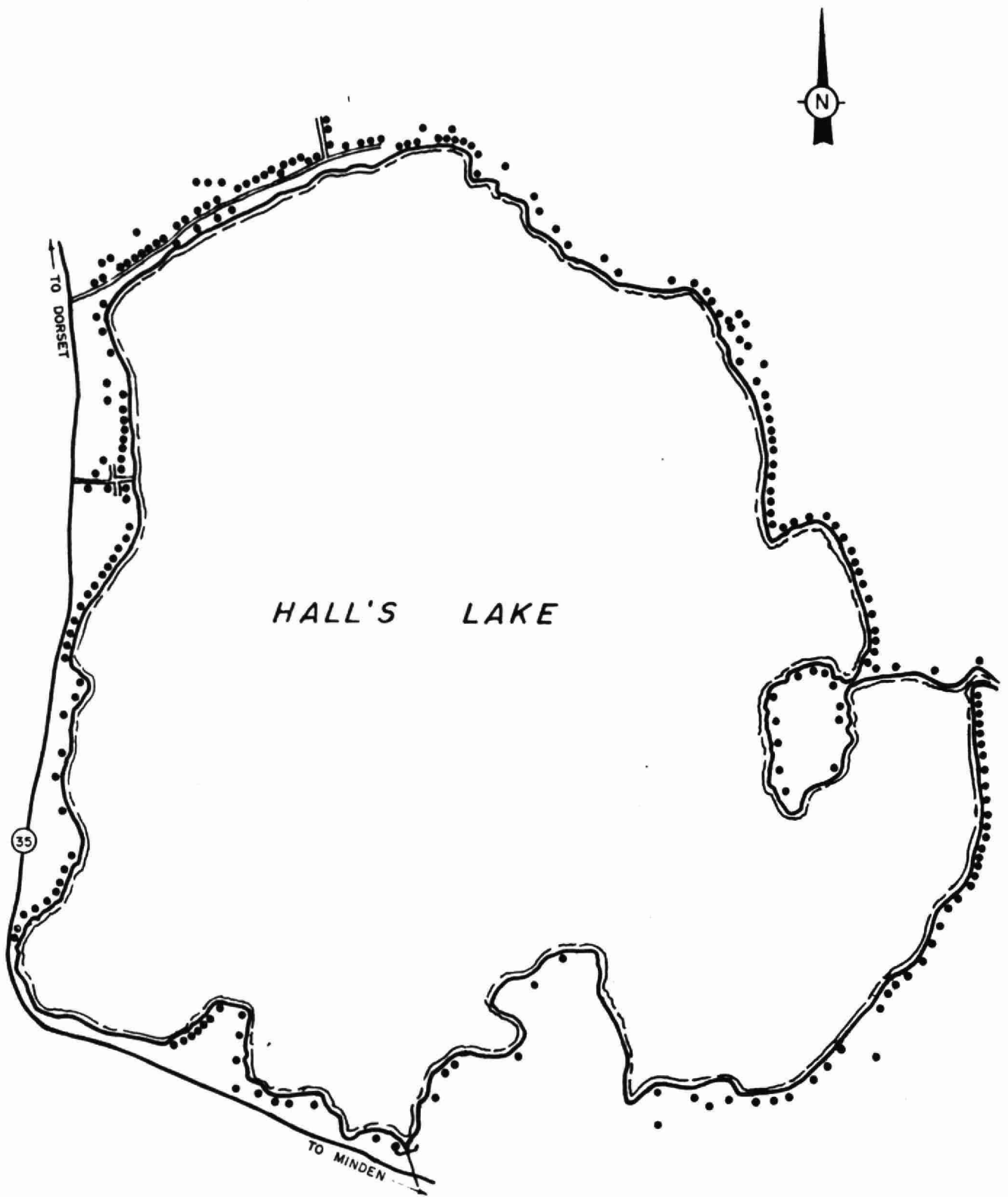
HALL'S LAKE

The geographic description of Hall's Lake is the County of Haliburton, Township of Stanhope, Latitude 45 degrees 06 minutes, Longitude 78 degrees 45 minutes. The perimeter of the lake is 13.28 kilometres and the surface area is 540 hectares. The maximum water depth is 81 metres and the lake is part of the Lake Ontario Drainage Basin.

Hall's Lake lies in the Precambrian Shield. A large portion of the shoreline, being the northwest, northeast and southerly areas lies on a glacial spillway. It is characterized by deposits of stratified sandy soil.

There were 275 private sewage disposal systems inspected on Hall's Lake during the Summer of 1986. Of these, 137 or 49.8% were classified as seriously substandard, 50 or 18.2% were unsatisfactory due to the improper disposal of solid waste or washwater, 1 or 0.4% were classified as direct polluters and 18 systems or 6.5% were unclassified by the survey crew at the end of the survey.

As of December 31, 1986, 17 faulty systems had been corrected and 4 owners have signed agreements to complete corrections during the construction season of 1987. Ministry Environmental Officers are currently directing their efforts toward obtaining agreements from owners.



MINISTRY OF THE ENVIRONMENT

HALL'S LAKE
STANHOPE TOWNSHIP
HALIBURTON COUNTY

SCALE: N.T.S.

DRAWN BY: E.D.B.

DATE: JANUARY, 1987

CHECKED BY: F.P.C.

DRAWING NO.: 8701

LAKE OF BAYS

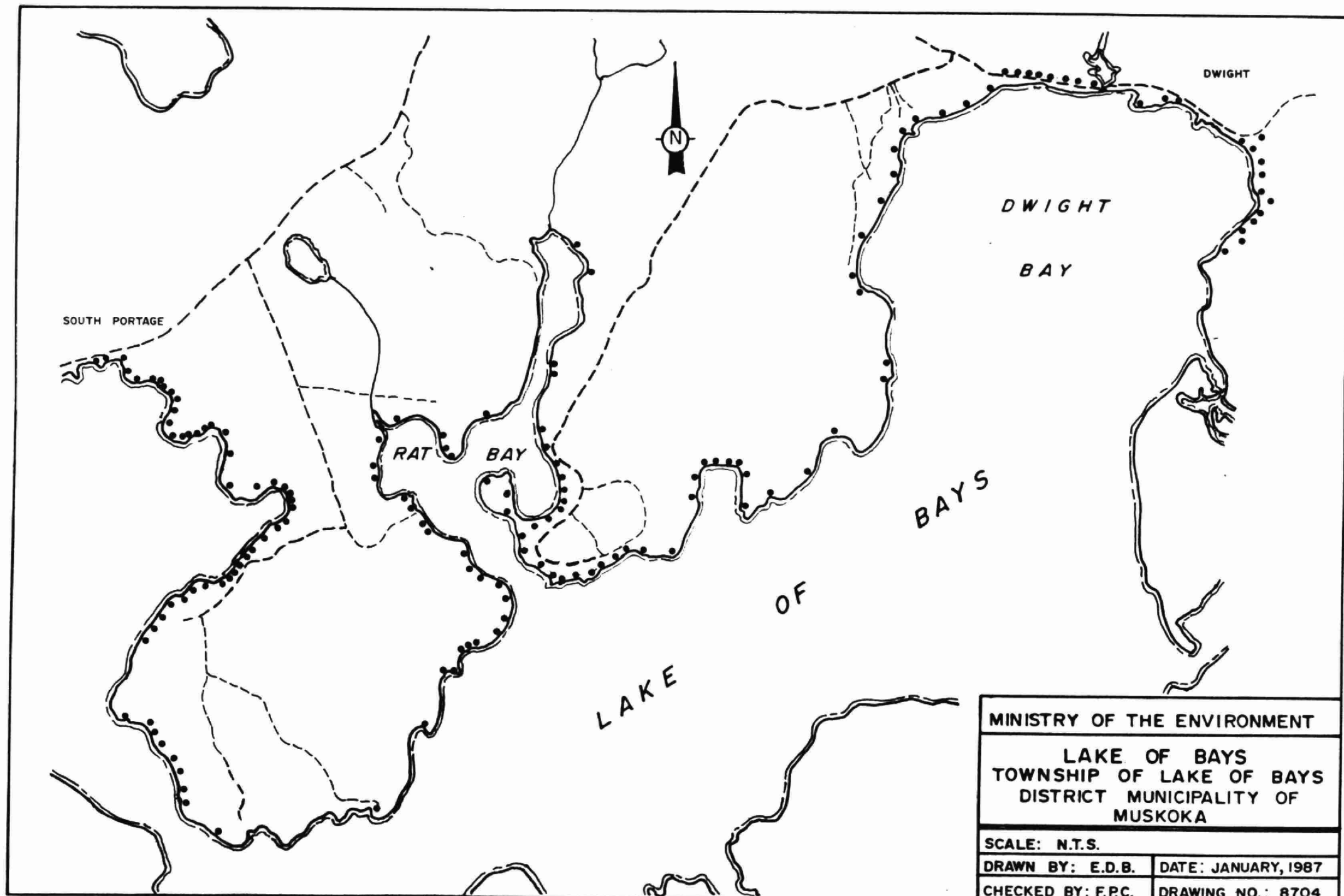
The geographic description for that part of Lake of Bays surveyed during 1986 is the District Municipality of Muskoka, Township of Lake of Bays, Franklin Ward, Latitude 45 degrees 19 minutes, Longitude 79 degrees 04 minutes. Approximately 18 kilometres of lake shoreline were examined.

Headwater lakes to the northwest as far as Algonquin Park drain through this lake. These waters are part of the Greater Lake Huron Watershed.

The shoreline physiography is typical of many lakes on the Precambrian Shield, shallow till and rock ridges. The Dwight Bay area is characterized by a sand plain.

There were 195 private sewage disposal systems inspected on Lake of Bays during the summer of 1986. Of these, 72 or 36.8% were classified as seriously substandard, 26 or 13.4 % were unsatisfactory due to the improper disposal of solid waste or washwater, 0 were classified as direct polluters and 16 systems or 8.3% were unclassified by the survey crew at the end of the survey.

As of December 31, 1986, 8 faulty systems had been corrected and 16 owners have signed agreements to complete corrections during the construction season of 1987. Ministry Environmental Officers are currently directing their efforts toward obtaining agreements from owners.



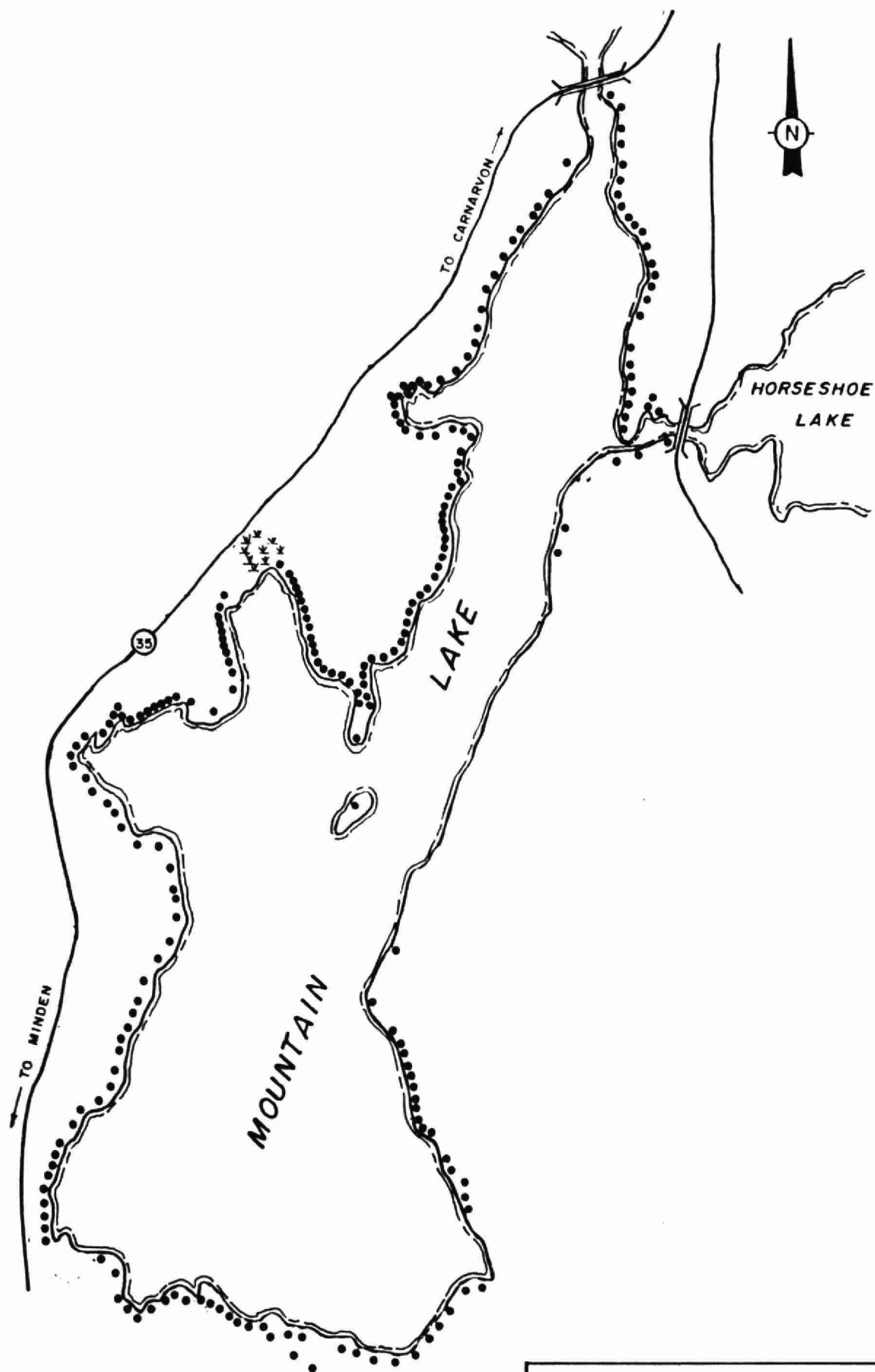
MOUNTAIN LAKE

The geographic description of Mountain Lake is the County of Haliburton, Township of Anson, Hindon and Minden, Latitude 44 degrees 59 minutes, Longitude 78 degrees 43 minutes. The perimeter of the Island is 8.5 kilometres and the surface area is 789 hectares. The maximum water depth is 32 metres and the lake is part of the Lake Ontario Drainage Basin.

Mountain Lake lies in the Precambrian Shield. The narrows between Mountain Lake and Horseshoe have deposits of stratified sandy soil which is characteristic of a spillway. The remainder consists of shallow till and rock ridges.

There were 260 private sewage disposal systems inspected on Mountain Lake during the Summer of 1986. Of these, 101 or 38.9% were classified as seriously substandard, 48 or 18.4% were unsatisfactory due to the improper disposal of solid waste or washwater, 1 or 0.4% were classified as direct polluters and 19 systems or 6.9% were unclassified by the survey crew at the end of the survey.

As of December 31, 1986, 35 faulty systems had been corrected and 9 owners have signed agreements to complete corrections during the construction season of 1987. Ministry Environmental Officers are currently directing their efforts toward obtaining agreements from owners.



MINISTRY OF THE ENVIRONMENT

MOUNTAIN LAKE

ANSON, HINDON, MINDEN TOWNSHIP
HALIBURTON COUNTY

SCALE: N.T.S.

DRAWN BY: E.D.B.

DATE: JANUARY, 1987

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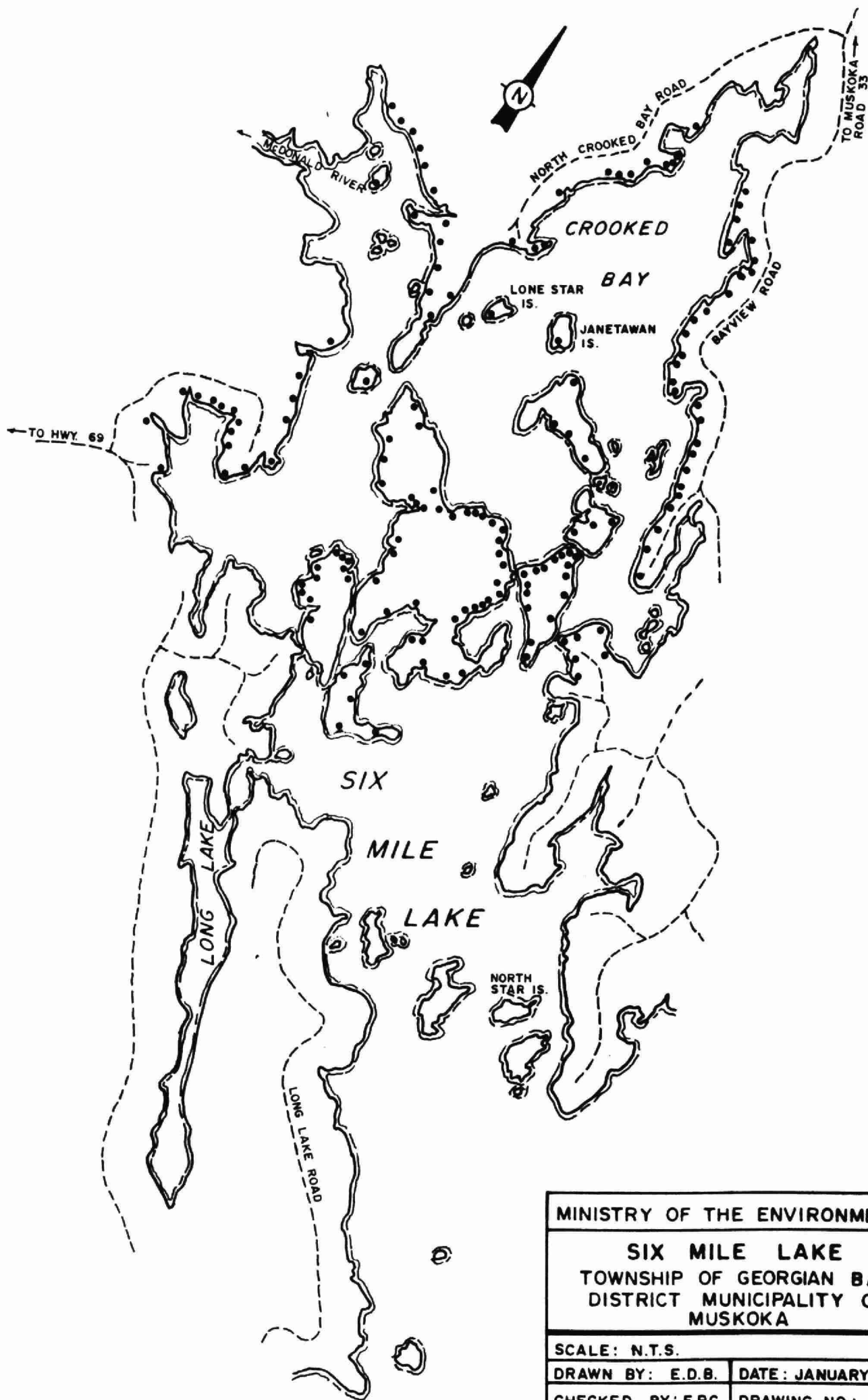
SIX MILE LAKE

The geographic description for that part of Six Mile Lake surveyed during 1986 is the District Municipality of Muskoka, Township of Georgian Bay, Baxter Ward and Gibson Ward, Latitude 45 degrees 56 minutes, Longitude 79 degrees 45 minutes. Approximately 16 kilometres of lake shoreline were examined. This consists of the north portion of Crooked Bay and the islands contained in this area. The remainder of the area will be studied in future years.

Six Mile Lake lies in the Precambrian Shield and is characterized by bare rock ridges and shallow till.

There were 153 private sewage disposal systems inspected on Six Mile Lake during the Summer of 1986. Of these, 58 or 37.9% were classified as seriously substandard, 53 or 34.7% were unsatisfactory due to the improper disposal of solid waste or washwater, 0 were classified as direct polluters and 5 systems or 3.2% were unclassified by the survey crew at the end of the survey.

As of December 31, 1986, 8 faulty systems had been corrected and 6 owners have signed agreements to complete corrections during the construction season of 1987. Ministry Environmental Officers are currently directing their efforts toward obtaining agreements from owners.



MINISTRY OF THE ENVIRONMENT

SIX MILE LAKE
TOWNSHIP OF GEORGIAN BAY
DISTRICT MUNICIPALITY OF MUSKOKA

SCALE: N.T.S.

DRAWN BY: E.D.B. DATE: JANUARY, 1987

CHECKED BY: F.P.C. DRAWING NO.: 8703

APPENDIX I

PRELIMINARY CLASSIFICATION OF SYSTEMS INSPECTED

1986

Body of Water	Number of Systems Inspected	Classification of Systems*															
		Satisfactory		Satisfactory Performance		Seriously Substandard		Nuisance (Wash Water)		Nuisance (Solid Waste)		Direct Polluter		Unclassified Temporarily		Unclassified	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Hall's	275	9	3.3	60	21.8	137	49.8	29	10.6	21	7.6	1	0.4	16	5.8	2	0.7
Lake of Bays	195	28	14.4	53	27.1	72	36.8	14	7.2	12	6.2	0	0	12	6.2	4	2.1
Mountain	260	8	3.1	83	31.9	101	38.9	27	10.4	21	8.0	1	0.4	18	6.9	1	0.4
Six Mile	153	7	4.6	30	19.6	58	37.9	22	14.4	31	20.3	0	0	4	2.6	1	0.6
TOTALS	883	52	5.9	226	25.6	368	47.7	92	10.4	85	9.6	2	0.2	50	5.7	8	0.9

*See page 4 for definition of classifications

LAKE SURVEYED

DISTRICT MUNICIPALITY OF MUSKOKA
HALIBURTON COUNTY

<u>YEAR OF SURVEY</u>	<u>LAKE</u>	<u>NUMBER OF SYSTEMS</u> <u>INSPECTED</u>
1967	Six Mile (Crooked Bay)	165
1969	Riley	150
1970	Sparrow	302
1971	Muskoka (Muskoka Bay)	270
1971	Leonard	112
1974	Bass (Ryde)	23
1974	Clear (Wood)	155
1974	Harp	78
1974	Kahshe	481
1974	Twelve Mile Lake	168
1974	Wood	205
1975	Muskoka(Bala Bay)	280
1975	Dark	38
1975	Gull (Muskoka)	138
1975	Gull (Haliburton)	413
1975	Silver	37
1975	Three Mile	542
1976	Joseph (Ames Point)	25
1976	Muskoka (Sandy Bay)	17
1976	Dickie	121
1976	Go Home Bay	119
1976	Loon	175
1976	Muldrew	378
1976	Ril	140
1976	Turtle	63
1977	Honey Harbour (South Bay)	834
1977	Muskoka (Milford Bay)	292
1977	Paudash (Haliburton)	364
1977	Joseph (Woodroffe Bay)	44
1978	Honey Harbour (North Bay)	476
1978	Severn River	833
1978	Indian River	67
1979	Esson	117
1979	Kashagawigamog (North Half)	533
1979	Muskoka	463
1979	Miskwabi	78
1979	Nine Mile	138
1980	Black Lake	57
1980	Kashagawigamog (South Half)	273
1980	Muskoka	175
1980	Soyer's	142
1980	Stewart	97
1981	Morrison	175

1981	Muskoka (Broadley Point)	239
1981	Salerno	165
1981	Sunny	56
1982	Boshkung	348
1982	Lake of Bays (Narrows)	127
1982	Muskoka (East Bay, Kettles)	227
1982	St. George	105
1982	Little Dudman	69
1982	Long	88
1982	Negaunee	15
1983	Clement	35
1983	Haliburton (South Bay)	124
1983	Lake of Bays (Narrows Cont'd)	138
1983	Long (Muskoka)	110
1983	Muskoka (Dudley Bay)	132
1983	Oxbow	134
1983	Waseosa	139
1983	Young	67
1984	Lake of Bays	187
1984	Twelve Mile	249
1984	Little Boshkung	81
1985	Lake Muskoka (Browning Island)	119
1985	Lake of Bays	260
1985	Horseshoe	289
1985	Lower Paudash	256
1986	Hall's Lake	275
1986	Lake of Bays	195
1986	Mountain	260
1986	Six Mile	153



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